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# MSAPC ADVISORY CIRCULAR

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF AIR AND WASTE MANAGEMENT ●

MOBILE SOURCE AIR POLLUTION CONTROL

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A/C NO. 46

June 12, 1975

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SUBJECT: Qualification by Manufacturers of Statements of Compliance with  
40 CFR 85.004(b)(1)(ii)

A. Purpose

This advisory circular provides guidance to manufacturers who propose to qualify their compliance with 40 CFR §85.004(b)(1)(ii) of the certification regulations.

B. Background

1. Section 85.004(b)(1)(ii) requires that an emission control system:

"Shall not in its operation, function, or malfunction, result in any unsafe condition endangering the motor vehicle, its occupants or persons or property in close proximity to the vehicle."

2. Part II Section II of the suggested format for Application for Certification, (attachment to Advisory Circular 43, dated July 12, 1974) requires manufacturers to specifically state that their vehicles will be in compliance with §85.004(b).

3. Several manufacturers have suggested that they could not accurately state that, under all reasonably foreseeable conditions of malfunction, misuse or abuse, their vehicles would comply with a literal reading of §85.004(b)(1)(ii), and have proposed to qualify their statements of compliance. EPA technical staff has reviewed this matter in coordination with EPA's Office of General Counsel, and has concluded that to avoid the unrealistically stringent results that might accompany literal reading of §85.004(b)(1)(ii), some qualification by the manufacturer of the statement of compliance with §85.004(b)(1)(ii) is acceptable, if appropriately supported.

4. Issuance of this Advisory Circular should not be construed as a finding by EPA that qualification of the statement of compliance with 40 CFR §85.004(b)(1)(ii) is required for any emission control system. However, if a manufacturer's data or technical judgement should indicate to the manufacturer that an unqualified statement of compliance would not be entirely accurate, EPA will consider acceptance of statements qualified in the manner set forth in this Advisory Circular.

C. Acceptable Qualification of Statements of Compliance with §85.004(b)(1)(ii)

1. The manufacturer's statement of compliance with the provisions of §85.004(b)(1)(ii) may be qualified only to the extent that:

- a. Any reasonably foreseeable unsafe condition attributable to the emission control system occurs only as a result of conditions of malfunction or vehicle abuse or misuse; and
- b. Any such malfunction which might result in an unsafe condition must be one which would be reasonably related to vehicle abuse, misuse, tampering or significant failure to perform essential maintenance; and
- c. Any such malfunction must sufficiently affect vehicle driveability, or otherwise put the driver on notice of the malfunction, so that a reasonably prudent person would have service performed; and
- d. Any such abuse or misuse of the vehicles should be contrary to the precautions drivers should take during normal vehicle operation, as stated by the manufacturer in the owners manual, or be outside the normal mode or use intended for the vehicle which an ordinarily prudent operator would be expected to follow.

2. 40 CFR Part 85 requires that "the manufacturer shall furnish or cause to be furnished to the ultimate purchaser of each motor vehicle subject to the standard prescribed...written instructions for the maintenance and use of the vehicle by the ultimate purchaser as may be reasonable and necessary to assure the proper functioning of emission control systems." In order for a qualification to be considered acceptable, the manufacturer should provide in the owner's manual of each vehicle equipped with an engine from the engine family for which certification is sought:

- a. A general description of the types of operator abuse, misuse, or tampering which could cause an unsafe condition in the emission control system.
- b. A general description of the type of adverse affect on vehicle driveability, or such other clear indication to the vehicle's driver, that would cause a reasonably prudent person to have the necessary service performed.

D. Documentation Required to Support Proposed Qualification of Compliance With §85.004(b)(1)(ii).

1. In order to assure itself that a manufacturer's qualification of his statement of compliance with §85.004(b)(1)(ii) is not inconsistent with the regulations, EPA must have adequate data as to the hazard(s) for



which qualification is sought by the manufacturer, so that an informed determination can be made as to whether a qualified statement of compliance should be accepted. In general terms, these data must, to the degree possible, delineate the scope of the qualification. It is not, however, necessary for the manufacturer to enumerate every possible combination of events which might result in a hazardous condition. The following guidelines for documentation of qualifications of statements of compliance with §85.004(b)(1)(ii) should therefore be read in light of the foregoing.

2. To avoid delay in the issuance of certificates of conformity, any manufacturer who desires to qualify his statement of conformity with §85.004(b)(1)(ii) should:

- a. Qualify his statement of compliance only in a manner consistent with paragraphs C.1.a. through C.1.d., above, for those vehicles which will be equipped with engines from an engine family for which certification subject to a qualified statement of conformity is sought;
- b. Provide a general description of the principal unsafe condition(s) for which the manufacturer desires qualification which could be caused by the emission control system (e.g., catalyst overheating);
- c. Provide a general description of the immediate cause of the unsafe condition (e.g., excess unburned fuel in the catalyst);
- d. Identify the principal types of abuse, misuse, tampering or malfunction which might cause the effect described in D.2.c.;
- e. Generally identify the manner in which any malfunctions noted in D.2.d. would affect driveability or would otherwise put the driver on notice of the malfunction.

3. The documentation called for by paragraphs D.2.b. through D.2.e. above should, to avoid delays, accompany the Part II Application for Certification.



# MSAPC ADVISORY CIRCULAR

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF AIR AND WASTE MANAGEMENT ●

MOBILE SOURCE AIR POLLUTION CONTROL

A/C NO. 50A

December 16, 1976

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SUBJECT: Test Vehicle Preconditioning

A. Purpose

The purpose of this Advisory Circular is to outline under what general circumstances additional test vehicle preconditioning may be granted or required by EPA. This Advisory Circular supersedes Advisory Circular No. 50 for 1978 and later model year vehicles. Advisory Circular No. 50 continues to apply for 1976 and 1977 model year vehicles.

B. Background

1. Advisory Circular No. 50 published on October 7, 1975 outlined preconditioning test procedures for vehicles to be tested for exhaust emissions only different from those for vehicles to be tested for both exhaust and evaporative emissions. In addition, Advisory Circular No. 50 provided for additional preconditioning for vehicles which encountered unusual circumstances in shipment to EPA or were stored outside at EPA for extended periods of time prior to testing.

2. On August 23, 1976, EPA promulgated regulations (40 CFR §86.101 et seq., 41 FR 35627) which specified the test procedures for exhaust and evaporative emissions for 1978 and later model year light-duty vehicles and light-duty trucks. These regulations specify preconditioning procedures for test vehicles and provide, in unusual but unspecified circumstances, for additional preconditioning if granted or required by EPA. (see §86.132-78.) These regulations, however, do not provide preconditioning procedures for vehicles being tested only for exhaust emissions different from those for vehicles being tested for both exhaust and evaporative emissions.

3. Manufacturers have asked for EPA's criteria for determining what "unusual circumstances" justify granting a manufacturer's request for additional preconditioning and how many additional cycles would be granted. Manufacturers have also asked under what circumstances EPA might require additional preconditioning to assure stabilization of the evaporative emission control system.

4. The intent of the new regulations (August 23, 1976) is to ensure that the evaporative emission control systems are designed to function effectively in use. Even in a situation where the canister is saturated (for whatever reason), an evaporative emission control system should be designed to purge sufficiently during typical urban driving so that it can hold the evaporative emissions from one hot soak and one diurnal.

5. It is EPA's view that a properly designed evaporative emission control system should, under most circumstances, be adequately stabilized by the single required urban dynamometer driving schedule (UDDS) preconditioning cycle. Furthermore, it is EPA's view that manufacturers should deliver their vehicles to EPA test facilities in a manner and condition such that the vehicles are representative of typical operation and should only require the single UDDS preconditioning cycle to assure adequate stabilization prior to being tested. Manufacturers who fly their vehicles to Detroit Metropolitan Airport, and then truck the vehicles to the EPA lab, have the option of driving the vehicles on local Ann Arbor streets before formally delivering them to EPA for testing (as provided in Advisory Circular No. 23). Therefore, preconditioning in addition to this single UDDS cycle will only be granted or required under unusual circumstances occurring after vehicles are delivered to EPA.

6. Because consideration of requests from manufacturers for additional preconditioning will be limited to those "unusual circumstances" which occur after the vehicle is received at EPA and prior to the time the test sequence is initiated, EPA has instituted vehicle handling procedures which minimize the occurrence of any "unusual circumstances" and thereby minimize the need for additional preconditioning.

#### C. Applicability

This Advisory Circular is applicable to all 1978 and later model year gasoline-fueled light-duty vehicles and light-duty trucks and Diesel light-duty vehicles and light-duty trucks. Advisory Circular No. 50 continues to apply for 1976 and 1977 model year vehicles.

#### D. Delivery of Vehicles to EPA

1. It is the manufacturer's responsibility to deliver his test vehicles to EPA by such procedures that the vehicle and its exhaust and evaporative emission control systems are representative of typical operation and are capable of being adequately stabilized by a single UDDS preconditioning cycle.

2. Manufacturers are cautioned against disconnecting or removing emission control hardware during shipment. Because 40 CFR §86.078-26 requires that vehicles accumulate mileage with "all emission control systems installed and operating," such alteration of the vehicle may render it unrepresentative and subject to disqualification.

3. Prior to testing, removal of evaporative emission control system components (including purge lines) for the purpose of limiting any interaction between ambient conditions and the exhaust or evaporative emission control systems during storage at EPA will not be permitted.

4. Requests for additional preconditioning will not be granted on the basis of the condition in which the vehicle was received by EPA.

**E. Unusual Circumstances Requiring Additional Preconditioning**

1. Vehicles in storage without operation (after receipt at EPA) for more than 5 days may require additional preconditioning to ensure their representativeness. Therefore, each vehicle stored more than 120 consecutive hours (5 days) without any preconditioning operation will receive an additional preconditioning cycle consisting of a minimum one hour hot soak and one UDDS unless the manufacturer requests that the vehicle not receive additional preconditioning.

2. In circumstances where there is reason to believe that a test vehicle is delivered to EPA in an unstabilized condition which is likely to cause exhaust or evaporative emission test results to underestimate the vehicle's true emissions (e.g., an abnormally purged canister), EPA will require additional preconditioning. The number of additional preconditioning cycles required in such cases will be determined on an individual basis for each vehicle and circumstance.

**F. Preconditioning for Testing at the Manufacturer's Facility**

1. EPA realizes that at zero-miles, manufacturers may have concerns that the single UDDS preconditioning cycle may not provide sufficient vehicle operation to produce representative emission results on a vehicle which has had little or no prior operation. Consistent with practice instituted in the 1976 certification program, EPA has concluded that it is appropriate to authorize, on an optional basis, up to three UDDS cycles, each separated by a one-hour hot soak, in addition to the UDDS preconditioning cycle prior to the zero-mile emission test. Manufacturers need not request prior approval for conducting this additional preconditioning, but should note the number of UDDS cycles conducted on their vehicle log sheet.

2. Requests for additional preconditioning for testing at the manufacturer's facility at any test point other than zero miles will be considered on an individual basis. The criteria EPA will use when considering such requests are outlined in paragraphs D. and E. of this Advisory Circular.

Mobile Source Air Pollution Control